
**CARDIAC STIMULATION DEVICE FOR OPTIMIZING CARDIAC
OUTPUT WITH MYOCARDIAL ISCHEMIA PROTECTION**

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ABSTRACT

A cardiac stimulation device and method detect myocardial ischemia and provide a response for alleviating the ischemia. Myocardial ischemia is detected by identifying changes in the ST-segment of the intracardiac electrogram (EGM) sensed using large sensing electrode surfaces created by electrically coupling one or more cardiac electrodes or by using larger surface area shocking coils. Myocardial ischemia monitoring is performed when stimulation parameters are adjusted for increasing cardiac output, causing an increased metabolic demand to be placed on the myocardium itself. When myocardial ischemia is detected, stimulation parameters are re-adjusted to reduce the demand placed on the myocardium and thereby alleviate the ischemia.